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817

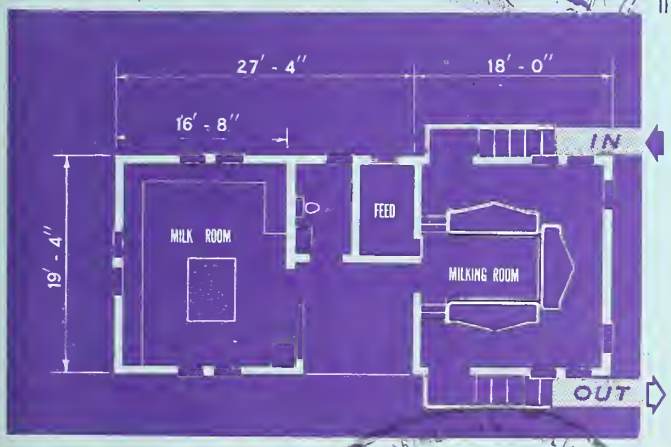
COOPERATIVE FARM BUILDING

PLAN NO. 5736

(3-SHEETS)

PLAN EXCHANGE

MILKING PLANT ...U type



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BELTSVILLE BRANCH

This plant, with a "U"-type milking room and three alternate milk-room arrangements for pipeline milkers delivering to bulk tanks, is a convenient arrangement for herds of 25 to 50 cows. Plans show three-, four-, and five-stall arrangements. More than five stalls in a "U"-type milking room causes congestion in the cow passageway and results in loss of labor efficiency.

Complete working drawings, which show materials and construction details, may be obtained through your county agent or from the Extension Agricultural Engineer at most State agricultural colleges. There is usually a small charge.

ORDER PLAN NO. 5736, MILKING PLANT, U-TYPE

If working drawings of this plan are not available in your State, write to the U.S. Department of Agriculture, Agricultural Engineering Research Division, Plant Industry Station, Beltsville, Maryland. The U.S. Department of Agriculture does not distribute drawings, but will direct you to a State that does distribute them.

MARCH 1960

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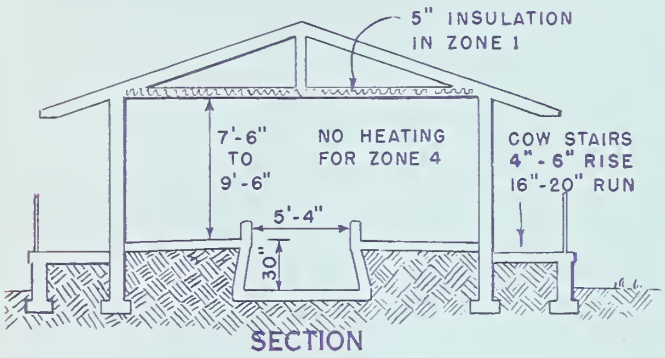
GENERAL MANAGEMENT

The elevated stalls and one-level milkroom and operator pit adapt the plan to either bucket or pipeline milking.

One man can milk from 20 to 30 cows per hour depending on the number of stalls, number of milking units, and nature of the man and cows.

The space designated for a feed room can be used instead for the vacuum pump, central heating plant, and other storage. If this change is made, the walls of the milking room may be raised and supporting girders installed to permit storage of feed over the milking room. Or a feed storage bin can be located outside the milking room.



SECTION

Zone No.	Average January temperature (°F)	Suggested U value Btu/hr., Ft², °F		Heat needed in milking room (Btu/hr.)
		Walls	Ceiling	
1	0–20	0.20	0.06	7,000
2	20–35	.25	.08	7,000
3	35–50	.41	.12	5,500
4	Over 50	.56	.50	0

NOTE.—*Provide vapor barrier on warm side of walls and ceiling to protect insulation against moisture.*

For faster warmup the heat supply must be increased.

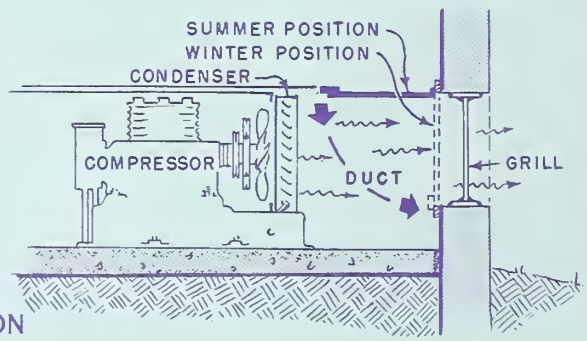
ELECTRICAL EQUIPMENT

Electric demand is heavy. Service entrance should be 100 amperes capacity which feeds a circuit breaker panel with master disconnect and space for six 230-volt and eight 115-volt circuits. Compressor and vacuum pumps of 3 horsepower or more should be fed with No. 10 wire. No. 12 wire will serve other circuits unless heating or special equipment requires over 20 amperes. All convenience outlets should have ground connections. Check with local codes for other wiring requirements.

"U"-type milking rooms tend to be difficult to light adequately. Therefore, the lighting shown on the detailed plan is recommended. If incandescent lights are preferred, 100-watt bulbs may replace strip fixtures shown (six each in milking room and milk-room, with spot lighting for critical areas).

A 12- to 14-inch fan that delivers 600 CFM at ⅛-inch static pressure should ventilate the milking room adequately. A fan that will deliver 1,200 cubic feet per minute for each horsepower capacity of the milk cooling compressor is needed for milk-room ventilation, when compressor heat is released in the room. The milk-room ventilation fan should be wired in parallel with the compressor so they will operate simultaneously. A switch in the line to the fan will make it possible to turn the fan off during cold weather.

If the compressor is remote from the bulk tank, provision to control the condenser cooling air for use in winter heating can be provided as shown below. This arrangement permits compressor heat to be blown out of the building in summer.



SECTION

SANITATION

Floor slopes, of at least ¼ inch per foot of run, are needed.

Interior finish should provide a smooth, easily cleaned surface, preferably light in color. If the finish is to be painted, use moisture-resistant paint.

Check with the local public health authorities on sanitation provisions before starting any construction.